Mumbai University

Question Paper

October – 2013

[B.Sc.IT – Semester: VI]
(IDOL – Revised Course)

❖ **Internet Technologies**

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Mumbai University

[IDOL – Revised Course]
(October – 2013)

Paper - I

Internet Technologies

Time: 3 Hours   **Total Marks:** 100

N.B.: **(1)** *All Question are Compulsory.*
   (2) *Make Suitable Assumptions Wherever Necessary And State The Assumptions Made.*
   (3) *Answer To The Same Question Must Be Written Together.*
   (4) *Number To The Right Indicates Marks.*
   (5) *Draw Neat Labeled Diagrams Wherever Necessary.*
   (6) *Use of Non – Programmable Calculator is allowed.*

Q.1   ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

(A)   Explain the use of Time Exceeded Message of ICMP.   **(5)**
(B)   List different types of BGP Messages and write the purpose of each.   **(5)**
(C)   Explain the following fields with respect to TCP Segment: **(5)**
   (i) *Sequence Number*
   (ii) *Acknowledgment to TCP Segment*
   (iii) *Header Length*
   (iv) *Window Size*
   (v) *Urgent Pointer*
(D)   Explain the Header Lines used in HTTP Request Message.   **(5)**

Q.2   ATTEMPT ANY THREE QUESTIONS: (15 MARKS)

(A)   List and explain the fields of IP Datagram used for fragmentation.   **(5)**
(B)   Explain the concept of Auto-Configuration with suitable example.   **(5)**
(C)   Find the errors and rewrite the following IPv4 Addresses: **(5)**
   (i) *427.45.12.47*
   (ii) *40.040.35.7.8*
   (iii) *A0.37.27.255*
   (iv) *27.01010101256.23*
   (v) *27.56.78.256*
(D)   Differentiate between OSI and TCP/IP.   **(5)**
(E)   Explain the record option of IPv4 with suitable example.   **(5)**
(F)   Explain the concept of sub-netting with suitable example.   **(5)**

Q.3   ATTEMPT ANY THREE QUESTIONS: (15 MARKS)

(A)   What is the use of Query Messages? Explain any one.   **(5)**
(B)   List and explain the use of timers used by RIP.   **(5)**
(C)   List and explain the different types of links in OSPF.   **(5)**
(D)   Explain the Input Module of ARP.   **(5)**
(E)   List the phases of the Mobile Hosts in order to communicate with the Remote Host. Explain.   **(5)**
(F)   What is link State Routing? Explain with suitable.   **(5)**

Q.4   ATTEMPT ANY THREE QUESTIONS: (15 MARKS)

(A)   List and explain various features od TCP.   **(5)**
(B)   Explain the INIT Chunk of SCTP.   **(5)**
(C)   Explain with examples how checksum is calculate in UDP.   **(5)**
(D)   What is Silly Window Syndrome? How is it created by the sender? Give the solution.   **(5)**
(E)   Explain the Maximum Window Size and Window Scale Factor options of TCP.   **(5)**
(F)   Explain the Half-Close Operation of TCP.   **(5)**

[TURN OVER]

Q.5   ATTEMPT ANY THREE QUESTIONS: (15 MARKS)

(A)   Explain the Character Mode and Line Mode of TELNET Operation.   **(5)**

(B)   List and explain the components of SSH.   **(5)**

(C)   List and explain various modes of telnet.   **(5)**

(D)   Explain the following states of DHCP State Transition Diagram: **(5)**
   (i)   *Selecting*
   (ii)   *Requesting*
   (iii)   *Bound*
   (iv)   *Renewing*
   (v)   *Rebinding*

(E)   List types of messages in DNS. Explain in short.   **(5)**

(F)   Explain the Read Request and write Request Messages of TFTP.   **(5)**

Q.6   ATTEMPT ANY THREE QUESTIONS: (15 MARKS)

(A)   Write the purpose of any four MIB Objects.   **(5)**

(B)   Write a short note on URL.   **(5)**

(C)   List and explain the Positive Completion Responses of SMTP.   **(5)**

(D)   Explain the integrated and differential services.   **(5)**

(E)   Write the functions of IMAP4 that are not carried out by POP3.   **(5)**

(F)   Explain the term MTA.   **(5)**

Q.7   ATTEMPT ANY THREE QUESTIONS: (15 MARKS)

(A)   Write a TCP Server code in JAVA to return the reverse of the number sent by client.   **(5)**

(B)   Explain the concept of socket with example.   **(5)**

(C)   Write a short note on Socket and ServerSocket Classes.   **(5)**

(D)   Write a JAVA Code for TCP server application to check whether the number is odd or even.   **(5)**

(E)   What is Network Interface? Explain how network interfaces are retrieved.   **(5)**

(F)   Write a JAVA code for UDP Server application to check whether the number is divisible by 15 and 27.   **(5)**